Xperia™ P

LT22i

XPERIA

White paper
April 2012

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Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

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Sony Developer World

For the latest technical documentation and development tools, go to *www.sonymobile.com/developer.*

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Product overview

Sony Xperia™ P – Experience bright

Stay in the sun and watch everything clearly on Xperia P's ultra-bright Reality Display with WhiteMagic™ technology. Shoot the action as it happens in full HD with the 8 MP camera. It starts up fast, snaps faster and is excellent in low light. Dull day? Brighten it up with your favourite music from Music Unlimited or the latest movies from Video Unlimited. All on Sony Entertainment Network[1]. Want to share your content on the big screen? View your pictures, movies and TV shows on your tablet, TV or laptop. It's so easy to connect.

Ultra-bright Reality Display

Read the news or see the latest sports clips on an ultra-bright screen, even in glaring sunlight, thanks to Sony's unique WhiteMagic™ technology. It automatically adjusts your screen to where you are – staying bright and super clear in sunlight, while saving power when you're inside. And thanks to Mobile BRAVIA® Engine, the colours in your favourite clips and stills look as razor sharp and clear as ever.

Geared up for great clips

Shoot it as you see it. The end of the party or the early morning start of your holiday. Make everything look as sharp as possible with Xperia™ P's 8 megapixel full HD camera with Exmor R™ for mobile image sensor. It helps you capture stunning pictures, even in low light.

Snap your shots in an instant

Some things are just too good to miss. Make sure you always get the right shot with Xperia™ P's super-fast camera. Just over a second from sleep to snap, and just one second between shots. And it's almost as quick to share your perfect pictures with friends on Facebook™, by text or mail.

Easy connectivity

Share all your stuff on the big screen – any screen. Just plug Xperia™ P into your TV's HDMI* port and the TV launcher menu pops up. Use the TV remote** to choose what you want in your phone – the latest movies, YouTube™ clips or your favourite TV series. And with one quick swipe you can share your photos wirelessly on your tablet, TV or laptop.

**HDMI cable not included*
***Requires that your TV is CEC compatible*

1.Video Unlimited and Music Unlimited are not available in every market.

Sony Entertainment Network[1]. Your ultimate source for digital entertainment

Feasts for film fans, masses of music. Enjoy a catalogue with millions and millions[2] of songs from Music Unlimited. Or download your favourite hit movies from Video Unlimited. It's all on Sony Entertainment Network. No trips to the store. No late fees. Just pure entertainment. The best tracks from Music Unlimited. The latest movies from Video Unlimited – enjoy everything with one account. It's the perfect fit for a life full of entertainment.

1.Video Unlimited and Music Unlimited are not available in every market.
2.The number of tracks available by country varies.

Signature features

The Sony Xperia™ P comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

The place to meet your friends

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™, Twitter™, email and text communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ Infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where’s best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you’ve got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks[1]

Operating system	Google™ Android™ 2.3 (Gingerbread)
Processor	1 GHz NovaThor™ U8500 Dual-core Cortex A9
GPU	ARM Mali-400
Size	122 x 59.5 x 10.5 mm
Weight	120 grams
Available colours	Silver, Black, Red
Main screen	
Colours	16,000,000 colour TFT
Resolution	960x540 pixels
Size (diagonal)	4 inches
Scratch-resistant	Hard coated shatter proof sheet on scratch-resistant glass
Input mechanisms	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 4 fingers supported
Memory	
Internal phone storage	16 GB (up to 13 GB user-accessible memory)
RAM	1 GB
Camera	
Camera resolution	8 megapixel
Digital zoom	8x
Photo flash	Yes – LED
Video recording	Yes – HD 1080p
Video chat camera	Yes
Sensors	
Accelerometer	Yes
Proximity sensor	Yes
Ambient light sensor	Yes

1.*Performance metrics measured under laboratory conditions*.

Magnetometer	Yes
Gyroscope	Yes
Networks	
LT22i	UMTS HSPA 850 (Band V), 900 (Band VIII), 1900 (Band II) and 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
Data transfer speeds	
GSM GPRS	Up to 100 kbps
GSM EDGE	Up to 296 kbps
UMTS HSPA cat 6 (upload)	Up to 5.6 Mbps
UMTS HSPA cat 10(download)	Up to 14.4 Mbps
Talk time (GSM)	Up to 6 hours*
Standby time (GSM)	Up to 470 hours*
Talk time (UMTS)	Up to 5 hours*
Standby time (UMTS)	Up to 475 hours*
Music listening time	Up to 80 hours
Video playback time	Up to 4 hours
Battery	1305 mAh, typical 1265 mAh, minimum

** Values are according to GSM Association Battery Life Measurement Technique. Preliminary measures as indication, final measures to be provided before commercial availability.*

NOTE: Battery performance may vary depending on network conditions and configurations, and phone usage.

Categorised feature list

Camera
3D Sweep Panorama™
8 megapixel camera
8x digital zoom
Auto focus
Face detection
Flash/Photo flash
Flash/Photo light
Front-facing camera (VGA)
Geotagging
HD video recording (1080p)
Image stabiliser
Red-eye reduction
Scene recognition
Self-timer
Smile detection
Sony Exmor R™ for mobile image sensor
Sweep Panorama™
Sweep Multi Angle™
Touch capture
Touch focus
Video light
Video recording

Music
3D surround sound
Album art
Bluetooth™ stereo (A2DP)
Clear bass
Clear stereo
Music Player
PlayNow™ service*
SensMe™
TrackID™ music recognition*
xLoud™

Internet
Google Play™
Bookmarks
Google™ search*
Google Voice™ Search*
Google Maps™ for Mobile with Street view and Latitude™*
NeoReader™ barcode scanner
Web browser (WebKit™)

Communication
Call list
Conference calls
Facebook™ application*
Facebook inside Xperia™
Google Talk™ application*
Noise suppression
Xperia™ Timescape™
Speakerphone
Twitter™ (Timescape™ integration)
Video chat ready

Messaging
Conversations
Email
Google Mail™*
Instant messaging
Multimedia messaging (MMS)
Predictive text input
Sound recorder
Text messaging (SMS)

Design
Auto rotation
Gesture input
Keyboard (on-screen, QWERTY)
Live Wallpaper
Reality Display with Sony WhiteMagic™ technology
Screenshot capturing
Sony Mobile BRAVIA® Engine
Touch screen
Voice input

Entertainment

3D Album
Accelerated Adobe Flash Video
Media browser
Motion gaming
Radio (FM radio with RDS)
Send to web
Sony Entertainment Network*
TV launcher
Video streaming
YouTube™*

Organiser

Airplane mode
Alarm clock
Calculator
Calendar
Contacts
Document readers
eCompass™
E-Manual
Notes
Setup guide
Stopwatch
Tasks
Timer

Connectivity

3.5 mm audio jack (CTIA)
aGPS*
Bluetooth™ wireless technology
DLNA Certified®
HDMI support
Media Transfer Protocol support
Micro USB support
Native USB tethering
NFC
PC Companion
Synchronisation via Microsoft® Exchange ActiveSync®
USB High speed 2.0 support
USB host
USB mass storage
Wi-Fi®
Wi-Fi® hotspot functionality
Wisepilot™ turn-by-turn navigation

** This service is not available in all markets.*

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0
Core version and supported core features	Advanced Audio 2.1 + EDR
Connectable devices	Products which support at least one of the Bluetooth profiles above.

More information:

www.sonymobile.com/developer

www.bluetooth.com

Wi-Fi®

Supported standards	IEEE 802.11b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM

DLNA Certified® (Digital Living Network Alliance)

Supported Device Classes	**M-DMS – Mobile Digital Media Server** Media Types: images, video and music Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified™ clients. **+PU+** Media Types: images, video and music Summary: Play media saved in the phone on another device, such as a TV or computer, using 2 box push technology. +PU+ is integrated in the Gallery and Music applications. **M-DMP – Mobile Digital Media Player** Media Types: images, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.
Supported Bearers	Wi-Fi®
DRM Support	The DLNA Certified® implementation does not support DRM-protected content.

NOTE: Only M-DMS/M-DMP/+PU+ for image will be applied for DLNA Certification.

Messaging

MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

More information:

www.sonymobile.com/developer

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v2.0
- 3GPP™ Control Plane location (incl. Emergency location)

Supported satellite systems:

GPS

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	**Decoder format**	**Supported in file format**
	Layer 3	MP3 (.mp3))
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4, .m4a)
	AMR-NB, AMR-WB	3GPP (.3gp)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
Audio Recording	**Encoder format**	**Supported in file format**
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4), AMR (.amr)
	AMR-NB, AMR-WB, AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps	3GPP (.3gp), MP4 (.mp4)
Image Playback	**Decoder format**	**Supported in file format**
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bitmap mask support	PNG (.png)
	Wireless Bitmap	WBMP (.wbmp)
Image Capture	**Encoder format**	**Supported in file format**
	Joint Photographic Experts Group	JPEG (.jpg)
Video Playback	**Decoder format**	**Supported in file format**
	MPEG-4 Visual Simple Profile Level 6, Advanced Simple Profile Level 5	3GPP (.3gp), MP4 (.mp4)
	H.264 High Profile, Level 4	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0, Level 70	3GPP (.3gp)
Video Recording	**Encoder format**	**Supported in file format**
	Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB	3GPP (.3gp), MP4 (.mp4)

Audio/Video Streaming	Streaming transport	RTSP according to 3GPP™ HTTP streaming
DRM	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM 1.0

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Google Sync™

Related information:

www.sonymobile.com/developer

Web browser

Browser version	Android 2.3 Browser (Based on WebKit)
Navigation/rendering	Adobe™ Flash™ 11* Full page PC rendering Landscape/portrait rendering Pan & Zoom Share link via NFC
Search	Internet Search
Browser compliancy	CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version 4.0 HTML version 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1
Supported Device API	Geo-location API
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

** Updates are distributed via Android market™.*

Related information:

www.sonymobile.com/developer

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